

DOCUMENT-IDENTIFIER: US 20030061402 A1

TITLE: Method and apparatus enabling both legacy and new applications to access an InfiniBand fabric via a socket API

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Application Filing Date - APD (1):
20010926

Detail Description Paragraph - DETX (4):

[0011] A packet of data associated with an application 110a (e.g., application 112) in the first system 105a flows (as denoted by arrows) from the application 110a to the socket API layer 120a. Applications 110a access services provided by the TCP/IP protocol stack 130a through the socket API layer 120a. A socket 122a provided by the socket API layer 120a is an abstraction through which an application 110a may send and receive data. To create an instance of a socket 122a, a protocol or address family must be specified for the socket. For TCP/IP, the AF_INET address family (also referred to as PF_INET) is specified, which indicates that the socket 122a will use the protocols and addresses from the Internet Protocol (IP) family.

Detail Description Paragraph - DETX (5):

[0012] A socket 122a (that uses the TCP/IP protocol family) is uniquely identified by an Internet address, an end-to-end protocol (e.g., TCP), and a port number of an associated port 124a. A port 124a is a pre-defined internal address that serves as a pathway between an application 110a and the TCP/IP protocol stack 130a and, typically, there may be 65,535 such addresses (numbered 1 through 65,535 with zero being reserved). Thus, the applications 110a need to specify an Internet address and a corresponding port 124a to use a specific socket 122a. It should be noted that a single socket abstraction 122a, as identified by a port number, can be referenced by multiple applications 110a on the first computer system 110a. For example, the port 122a' is accessed by the application 111 as well as by the application 112. To send data to (and receive data from) an application on another system, such as the second system 105b, a socket 122a on the first system must be connected to another socket 122b of the second system 205b.

Detail Description Paragraph - DETX (7):

[0014] The packet is subsequently provided to the network interface 140a. The network interface 140a provides an interface between the first system 105a and the network 190, and the network interface 140a may both transmit data packets onto, and receive packets from, the network 190. The network interface 140a transmits the packet over the network 190 to the second system 105b--the packet having been properly addressed to the second system 105b in the TCP/IP stack 130a--and the second system 105b receives the packet at its network

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interface 140b. The packet is then passed to the TCP/IP protocol stack 130b of the second system 105b for processing. Based on the specified port 124b (as identified by a port number) at the socket API layer 120b, the packet is provided via a corresponding socket 122b to the appropriate application 110b (e.g., application 116) in the second system 105b.

Detail Description Paragraph - DETX (22):

[0029] Referring to reference numeral 365 in FIG. 3, if the packet is associated with a legacy application 212b, the packet is passed to the SDP layer 240b, as shown at 370. Referring to reference numeral 375, a mapping between the SDP layer 240b and the socket API layer 220b is performed. As shown by reference numeral 380, the data contained in the packet is then provided to the legacy application 212b, the legacy application 212b being identified by a corresponding port number at the socket API layer 220b. Referring again to reference numeral 365, if the packet is not associated with a legacy application 212b but, rather, is associated with a new application 214b, a mapping from IB verbs 250b to the socket API layer 220b is performed, as shown at 385. Referring to reference numeral 390, the data is then provided to the new application 214b, as identified by a corresponding port number at the socket API layer 220b.

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